Serial Communication Cards

7

Universal PCI/PCL Communication Card Series

Features

- PCI bus 2.1/2.2 compliant
- Speeds up to 921.6 kbps
- UARTs with 128-byte standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Optional EFT protection up to 3,000 V_{DC}
- Optional isolation protection for RS-232/422/485 up to 3,000 V_{DC}
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-485 data flow control
- Communication performance analysis tools
- Supports any baud rate with high precision

Introduction

The PCI Local Bus is a high-performance bus that provides a processor-independent data path between the CPU and high-speed peripherals. PCI is a robust interconnection mechanism designed specifically to accommodate multiple high performance peripherals for serial communication, SCSI, LAN, etc.

The Advantech PCI communication cards are available with optical isolation up to 3000 V_{DC}. This protects your PC and equipment against damages from ground loops, which increases system reliability in harsh environments. To further increase reliability, the boards offers EFT protection; protecting your system from abrupt high voltage surges (up to 3000 V_{DC}), such as those caused by lightning during thunderstorms.

16PCI954/16PCI952 UART

The 16PCI954/16PCI952 is a high performance Quad UART with an on-chip PCI interface. Targeted at PCI-based serial and parallel expansion cards, PCI-architecture computer systems and embedded applications, the 16PCI954/16PC1952 integrates a PCI bus interface together with four 16C950 high performance UARTs, a bi-directional parallel port and a local bus bridge function. This single-chip solution replaces five or more integrated circuits used in today's products, giving performance, cost and size advantages to new designs.

Quick Troubleshooting

Advantech provides easy-to-use analysis tools and utilities that allows you to monitor or log data between two communicating devices, and help you acquire the data within a friendly user interface. Diagnostic functions make the installation process trouble free.

A RS-485 Network with Automatic Data Flow Control Using RS-232 Software

The RS-485 mode automatically senses the direction of incoming data and switches its transmission direction accordingly. The feature makes your network look and act just like an RS-232 network. Application software written for half duplex RS-232 can be used without modification. Moreover, you can simply and quickly build an RS-485 network with just two wires.

Serial Communication Card Selection Guide

Bus		Universal Low Profile PCI				PCI & Universal PCI			
Model Name		PCI-1602UP	PCI-1604UP	PCI-1610UP	PCI-1610AUP	PCI-1601A	PCI-1601B	PCI-1602A	PCI-1602B
Ports		2	2	4	4	2	2	2	2
Communication Interfaces	Current Loop	-	-	-	-	-	-	-	-
	RS-232	-	V	V	V	-	-	-	-
	RS-422	V	-	-	-	V	V	V	V
	RS-485	V	-	-	-	V	V	V	V
	CAN	-	-	-	-	-	-	-	-
Protection	EFT	2500 V_{DC}	2500 V_{DC}	2500 V_{DC}	-	-	2500 V_{DC}	-	2500 V_{DC}
	Isolation	2500 V_{DC}	-	-	-	-	-	3000 V_{DC}	3000 V_{DC}
Cable Connector Type		DB9 Male	DB9 Male	DB9 Male	DB9 Male	-	-	-	-
Page		7-11	7-11	7-11	7-11	7-5	7-5	7-5	7-5

Bus		PCI & Universal PCI							
Model Name		PCI-1603	PCI-1610A	PCI-1610A/9	PCI-1610B	PCI-1610B/9	PCI-1610CU	PCI-1610CU/9	PCI-1611U
Ports		2	4	4	4	4	4	4	4
Communication Interfaces	Current Loop	V	-	-	-	-	-	-	-
	RS-232	V	V	V	V	V	V	V	-
	RS-422	-	-	-	-	-	-	-	V
	RS-485	-	-	-	-	-	-	-	V
	CAN	-	-	-	-	-	-	-	-
Protection	EFT	-	-	-	3000 V_{DC}	3000 V_{DC}	2500 V_{DC}	2500 V_{DC}	2500 V_{DC}
	Isolation	3000 V_{DC}	-	-	-	-	2500 V_{DC}	2500 V_{DC}	2000 V_{DC}
Cable Connector Type		-	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB25 Male
Page		7-5	7-6	7-6	7-6	7-6	7-6	7-6	7-7
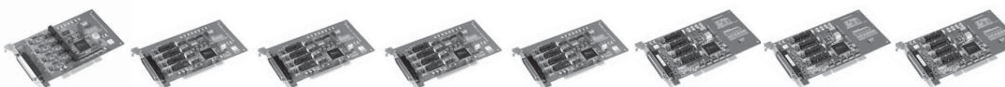
Bus		PCI & Universal PCI							
Model Name		PCI-1611U/9	PCI-1612A	PCI-1612A/9	PCI-1612B	PCI-1612B/9	PCI-1612AU	PCI-1612AU/9	PCI-1612BU
Ports		4	4	4	4	4	4	4	4
Communication Interfaces	Current Loop	-	-	-	-	-	-	-	-
	RS-232	-	V	V	V	V	V	V	V
	RS-422	V	V	V	V	V	V	V	V
	RS-485	V	V	V	V	V	V	V	V
	CAN	-	-	-	-	-	-	-	-
Protection	EFT	2500 V_{DC}	-	-	2500 V_{DC}	2500 V_{DC}	-	-	2500 V_{DC}
	Isolation	2000 V_{DC}	-	-	-	-	-	-	-
Cable Connector Type		DB9 Male	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB25 Male
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Serial Communication Card Selection Guide

Bus	PCI & Universal PCI							
Model Name	PCI-1612BU/9	PCI-1612CU	PCI-1612CU/9	PCI-1620A	PCI-1620B	PCI-1620AU	PCI-1620BU	PCI-1622CU
Ports	4	4	4	8	8	8	8	8
Communication Interfaces — Current Loop	-	-	-	-	-	-	-	-
Communication Interfaces — RS-232	V	V	V	V	V	V	V	-
Communication Interfaces — RS-422	V	V	V	-	-	-	-	V
Communication Interfaces — RS-485	V	V	V	-	-	-	-	V
Communication Interfaces — CAN	-	-	-	-	-	-	-	-
Protection — EFT	2500 V_{DC}	2500 V_{DC}	2500 V_{DC}	-	3000 V_{DC}	-	2500 V_{DC}	2500 V_{DC}
Protection — Isolation	-	2500 V_{DC}	2500 V_{DC}	-	-	-	-	2500 V_{DC}
Cable Connector Type	DB9 Male	DB25 Male	DB9 Male	Optional	Optional	Optional	Optional	Optional
Page	7-8	7-8	7-8	7-9	7-9	7-9	7-9	7-10
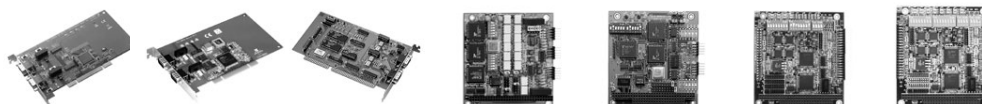
Bus	PCI & Universal PCI		ISA	PC/104			
Model Name	PCI-1682U	PCI-1680U	PCL-841	PCM-3610	PCM-3612	PCM-3614	PCM-3618
Ports	2	2	2	2	2	4	8
Communication Interfaces — Current Loop	-	-	-	-	-	-	-
Communication Interfaces — RS-232	-	-	-	V	-	-	-
Communication Interfaces — RS-422	-	-	-	V	V	V	V
Communication Interfaces — RS-485	-	-	-	V	V	V	V
Communication Interfaces — CAN	V	V	V	-	-	-	-
Protection — EFT	-	-	-	-	-	1000 V_{DC}	1000 V_{DC}
Protection — Isolation	1000 V_{DC}	1000 V_{DC}	1000 V_{DC}	1000 V_{DC}	-	-	-
Cable Connector Type	-	-	-	-	-	-	-
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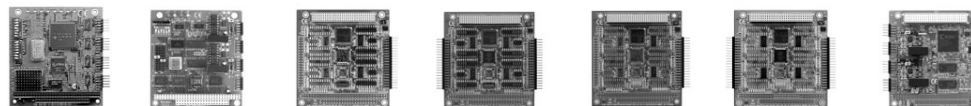
Bus	PC/104		PCI-104				
Model Name	PCM-3640/3641	PCM-3680	PCM-3614I	PCM-3618I	PCM-3641I	PCM-3642I	PCM-3680I
Ports	4	2	4	8	4	8	2
Communication Interfaces — Current Loop	-	-	-	-	-	-	-
Communication Interfaces — RS-232	V	-	V	V	V	V	-
Communication Interfaces — RS-422	-	-	V	V	-	-	-
Communication Interfaces — RS-485	-	-	V	V	-	-	-
Communication Interfaces — CAN	-	V	-	-	-	-	V
Protection — EFT	-	-	-	-	-	-	-
Protection — Isolation	-	1000 V_{DC}	-	-	-	-	2500 V_{DC}
Cable Connector Type	-	-	-	-	-	-	-
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ADVANTECH   **Serial Communication Cards**

PCI-1601
PCI-1602
PCI-1603

2-port RS-422/485 PCI Communication Card

2-port RS-422/485 PCI Communication Card with Isolation Protection

2-port RS-232/Current-loop PCI Communication Card with Isolation Protection

1 Operator Panels
2 Fanless Panel PCs
3 Panel Computers
4 Display Solutions
5 Ethernet Switches
6 Device Servers
7 Serial Comm. Cards
8 Video Surveillance
9 Pre-Configured Systems
10 IPC Chassis
11 SBCs and Backplanes
12 Industrial Motherboards
13 Embedded IPCs
14 Mobile Computers
15 IPC Peripherals
16 DAQ
17 Signal Conditioning
18 USB DAQ
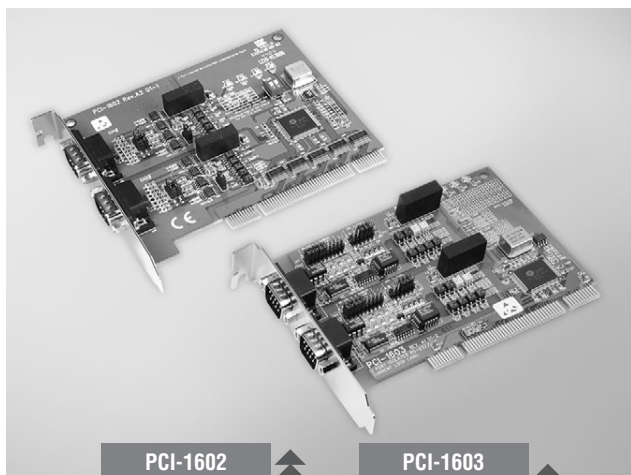
PCI-1602   **PCI-1603**

Features

- PCI bus 2.1 compliant
- Transmission Speed:
  PCI-1601/PCI-1602: up tp 921.6 kbps
  PCI-1603: RS-232: up to 230.4 kbps
  Current-loop: 57.6 kbps
- 2-port RS-422/485 interface (PCI-1601/PCI-1602)
- 2 independent RS-232 or Current-loop serial ports (PCI-1603)
- OS support: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Optional EFT protection
- Optional isolation protection for RS-422/485
- Supports any baud rate with high precision
- Space reserved for termination resistors
- Automatic RS-485 data flow control (PCI-1601/PCI-1602)
- Each port can be individually configured to RS-232 or current-loop (PCI-1603)

Introduction

PCI-1601 and PCI-1602 are 2 port RS-422/485 PCI communication cards that are compatible with the PCI 2.1 bus specification. Both cards provide two optional isolated and EFT protected RS-422/485 ports, and come with features such as: high transmission speed of 921.6 kbps, optional EFT & isolation protection, windows utility software and more. The cards also come with high-performance 16PCI952 UART with a 128-byte FIFO to reduce CPU load. This makes the PCI-1601 and PCI-1602 especially suitable for multitasking environments.

PCI-1602 is available with 3,000 V_{DC} optical isolation to protect your PC and equipment against damages from ground loops in harsh environments. To further increase reliability, both boards has EFT protection technology, protecting your system from abrupt high voltages up to 2,500 V_{DC} (PCI-1601B and PCI-1602B). Besides, Advantech also provides a convenient utility program called ICOM Tools, to help test the PCI card performance by analyzing the port status.

PCI-1603 offers a versatile range of high-speed interfacing options. You can switch its ports between the popular RS-232 or noise-resistant current-loop. The card utilizes 16PCI952 UARTs with 128-byte FIFO buffer for faster and more reliable communication, especially under multi-tasking environments such as Windows operating systems. The card utilizes 16PCI952 UART that buffers data into packets before sending it to the bus. This drastically reduces CPU load and avoids data loss when the system is busy and cannot process an interrupt quickly. These FIFO buffers make the PCI-1603 especially suitable for high speed serial I/O under Windows.

Specifications

General

- **Bus Type**   PCI V2.1
- **Certifications**   CE, FCC class A
- **Connectors**   2 x DB9-M
- **Dimensions**   123 x 92 mm (4.8" x 3.6")
- **Power Consumption**   Typical   Max
  PCI-1601   220 mA (+5 V)   270 mA (+5 V)
  PCI-1602/PCI-1603   250 mA (+5 V)   300 mA (+5 V)

Current-loop Interface (PCI-1603)

- **Baud-rate**   50 ~ 57600 bps
- **Current Value**   20 mA (Standard)
- **Mode**   Asynchronous, full duplex
- **Signal Driver/Receiver** 6N136
- **Signals**   TxD+, TxD-, RxD+, RxD-
- **Transmission Distance** 1000 m

Communications

- **Communications Controller** 16PCI952
- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND
  RS-485: Data+, Data-, GND
  RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
  Current Loop: Tx+, Tx-, Rx+, Rx-
- **FIFO**   128 bytes
- **Flow Control**   RTS/CTS. Xon/Xoff
- **IRQ**   Assigned by Plug & Play

- **Parity**   None, Odd, Even
- **Speed**   PCI-1601/PCI-1602: 50bps ~ 921.6 kbps
  PCI-1603: RS-232: 50bps ~ 230.4 kbps
  (Supports any baud rate)
  Current-loop: 57.6 kbps
- **Stop Bits**   1, 1.5, 2

Protection

- **ESD Protection**   16 kV
- **Isolation Protection**   3,000 V_{DC} (PCI-1602A/B and PCI-1603 for RS-232/current-loop)
- **EFT Protection**   2,500 V_{DC} (PCI-1601B/PCI-1602B only)

Software

- **Bundled Software**   ICOM Tools
- **OS Support**   Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity**   5 ~ 95 % RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (refer to IEC 68-2-1, 2) (32 ~ 149° F)
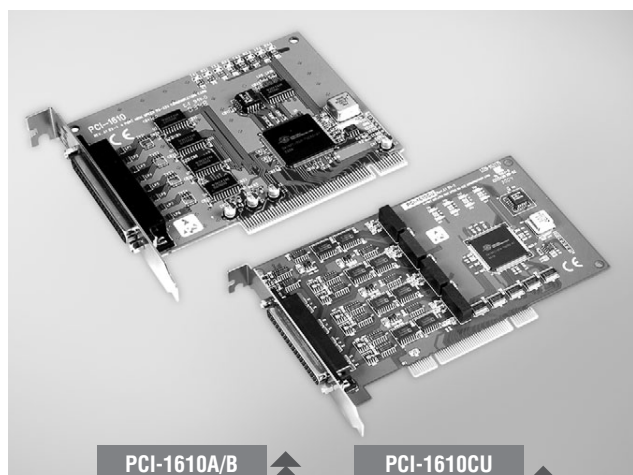- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1601A**   2-port RS-422/485 PCI Comm Card
- **PCI-1601B**   2-port RS-422/485 PCI Comm Card w/EFT
- **PCI-1602A**   2-port RS-422/485 PCI Comm Card w/Iso
- **PCI-1602B**   2-port RS-422/485 PCI Comm Card w/Iso and EFT
- **PCI-1603**   2-port Iso RS-232/current-loop PCI Comm Card

PCI-1610 Series

PCI-1610A/B   PCI-1610CU

Features

- PCI bus 2.1 (PCI-1610A/1610B), 2.2 (PCI-1610CU) compliant
- Speeds up to 921.6 kbps
- 4-port RS-232
- 16PCI954 UARTs with 128-byte FIFOs standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Interrupt status register for increased performance
- Supports any baud rate with high precision
- Universal PCI (supports 3.3 V or 5 V PCI bus signal) (PCI-1610CU only)
- 2,500 V_{DC} EFT Protection (PCI-1610B/1610CU)
- 2,500 V_{DC} Isolation Protection (PCI-1610CU only)

Introduction

PCI-1610 is a 4-port RS-232 PCI communication card that is compatible with the PCI 2.1 bus specification. (PCI-1610CU is also compliant with 2.2) and offer transmission speeds up to 921.6 kbps. PCI-1610 also comes with high-performance 16PCI954 UART with a 128-byte FIFO to reduce CPU load. These components make your system more stable and reliable. Thus, the PCI-1610 is especially suitable for multitasking environments.

PCI-1610CU has an universal PCI connector that is compatible with both the latest 3.3 V signaling systems and the traditional 5V signaling system. This gives high compatibility and allows usage in diverse systems. To further increase reliability, the PCI-1610B and PCI-1610CU offers EFT protection technology, protecting your system from abrupt high voltages up to 2,500 V_{DC}. PCI-1610CU also provides 2,500 V_{DC} isolation to protect your PC and equipment against damages from ground loops in harsh environments.

Specifications

General

- **Bus Type**   PCI V 2.1 (PCI-1610A/1610B)
  Universal PCI V 2.2 (PCI-1610CU)
- **Certifications**   CE, FCC class A
- **Connectors**   1 x DB37-F
- **Dimensions (L x W)**   123 x 92 mm (4.8" x 3.6") (for 1610A and PCI-1610B)
  185 x 100 mm (7.3" x 3.9") (for PCI-1610CU)
- **Power Consumption**

Typical	Max
+12 V: 60 mA	+12 V: 80 mA
+5 V: 150 mA	+5 V: 180 mA

Communications

- **Communication Controller**   16PCI954
- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND, RI
- **FIFO**   128 bytes
- **Flow Control**   RTS/CTS, Xon/Xoff
- **IRQ**   Assigned by Plug & Play
- **Parity**   None, Odd, Even
- **Stop Bits**   1, 1.5, 2
- **Speed**   50 bps ~ 921.6 kbps (Supports any baud rate)

Protection

- **ESD Protection**   16 kV
- **Isolation Protection**   2,500 V_{DC} (PCI-1610CU only)
- **EFT Protection**   2,500 V_{DC} (PCI-1610B/1610CU only)

Software

- **Bundled Software**   ICOM Tools
- **OS Support**   Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity**   5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (refer to IEC 68-2-1, 2), (32 ~ 149° F)
- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1610A**   4-port RS-232 PCI Comm Card (4 x DB25)
- **PCI-1610A/9**   4-port RS-232 PCI (4 x DB9)
- **PCI-1610B**   4-port RS-232 PCI Comm Card w/EFT, 4 x DB25
- **PCI-1610B/9**   4-port RS-232 PCI Comm Card w/EFT, 4 x DB9
- **PCI-1610CU**   4-port RS-232 Uni PCI Comm Card, Iso/EFT, 4 x DB25
- **PCI-1610CU/9**   4-port RS-232 Uni PCI Comm Card, Iso/EFT, 4 x DB9

Note: 30 cm DB37 to 4 x DB25 or DB37 to 4 x DB9 cable included

PCI-1611U

4-port RS-422/485 Universal PCI Communication Card with Isolation & EFT Protection
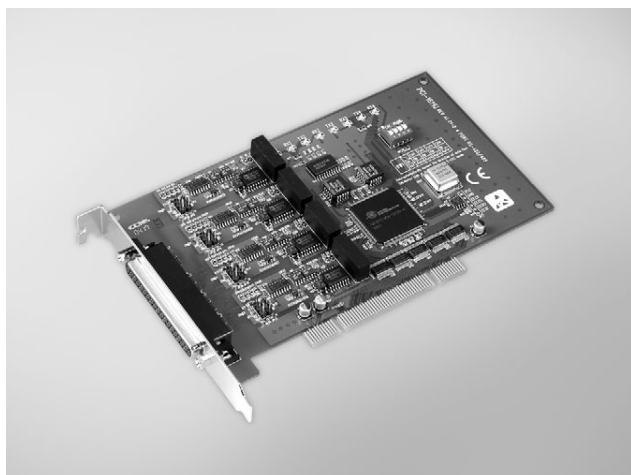
Features

- PCI bus 2.2 compliant
- Speeds up to 921.6 kbps
- 4-port RS-422/485
- 16PCI954 UARTs with 128-byte FIFOs standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-485 data flow control
- Supports any baud rate with high precision
- Universal PCI (Supports 3.3 V or 5 V PCI bus signal)
- 2,500 V_{DC} EFT Protection
- 2,000 V_{DC} Isolation Protection

RoHS COMPLIANT 2002/95/EC FCC CE

Introduction

PCI-1611U is a 4-port RS-422/485 PCI communication card that is compatible with the PCI 2.2 bus specification. The PCI-1611U provides many functions such as four independent RS-422/485 ports with isolation protection, high transmission speed of 921.6 kbps, and EFT protection. PCI-1611U also comes with high-performance 16PCI954 UARTs with a 128-byte FIFO to reduce CPU loading. These components make your system more stable and reliable. Thus, the PCI-1611U is especially suitable for multitasking environments.

To improve the performance of the system, the PCI-1611U allows transmission rates up to 921.6 kbps, and to further increase reliability, the PCI-1611U offers EFT protectiontechnology, protecting your system from abrupt high voltages up to 2,500 V_{DC}. Besides, Advantech also provides a convenient utility program, ICOM Tools, to help you test the PCI card's performance by analyzing the port status. The easy-to-use graphical user interface of ICOM Tools works like a PC-based data scope that lets you set trigger conditions to capture communication data and monitor a signal's status. ICOM Tools is applicable to all series of Advantech ICOM cards.

Specifications

General

- **Bus Type** — Universal PCI V 2.2
- **Certifications** — CE, FCC class A
- **Connectors** — 1 x DB37-F
- **Dimensions** — 185 x 100 mm (7.3" x 3.9")
- **Power Consumption** — 600 mA @ 5 V

Communications

- **Communication Controller** — 16PCI954
- **Data Bits** — 5, 6, 7, 8
- **Data Signals** — RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND
  RS-485: Data+, Data-, GND
- **FIFO** — 128 bytes
- **Flow Control** — RTS/CTS, Xon/Xoff
- **IRQ** — Assigned by Plug & Play
- **Parity** — None, Odd, Even
- **Speed** — 50 bps ~ 921.6 kbps (Supports any baud rate)
- **Stop Bits** — 1, 1.5, 2

Protection

- **ESD Protection** — 16 kV
- **Isolation Protection** — 2,000 V_{DC}
- **EFT Protection** — 2,500 V_{DC}

Software

- **Bundled Software** — ICOM Tools
- **OS Support** — Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity** — 5 ~ 95 % Relative Humidity, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature** — 0 ~ 65° C (refer to IEC 68-2-1, 2), (32 ~ 149° F)
- **Storage Temperature** — -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1611U** — 4-port RS-422/485 Uni PCI Comm Card, 4 x DB25
- **PCI-1611U/9** — 4-port RS-422/485 Uni PCI Comm Card, 4 x DB9

Note: 30 cm DB37 to 4 x DB25 or DB37 to 4 x DB9 cable included

PCI-1612 Series

4-port RS-232/422/485 PCI Communication Cards

PCI-1612A/B ▲ PCI-1612AU/BU

RoHS COMPLIANT 2002/95/EC FCC C€
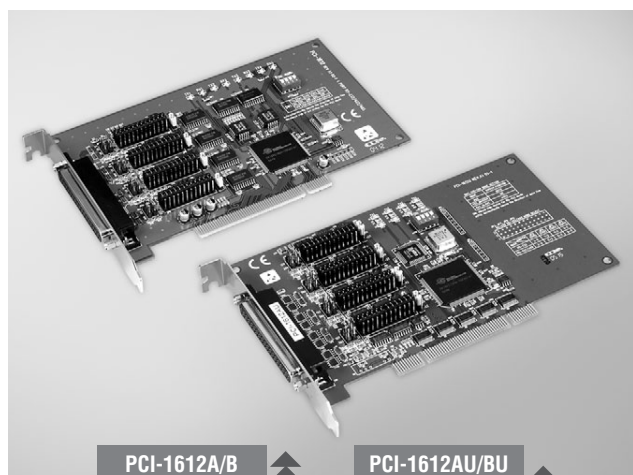
Features

- PCI bus 2.1 (PCI-1612A/1612B), 2.2 (PCI-1612AU/1612BU/1612CU) compliant
- Speeds up to 921.6 kbps
- 4-port RS-232/422/485
- 16PCI954 UARTs with 128-byte FIFOs standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-485 data flow control
- Supports any baud rate with high precision
- Universal PCI (Supports 3.3 V or 5 V PCI bus signal) (PCI-1612AU,PCI-1612BU, PCI-1612CU)
- 2,500 V_{DC} EFT Protection (PCI-1612B/1612BU/1612CU)
- 2,500 V_{DC} Isolation Protection (PCI-1612CU only)

Introduction

PCI-1612 is a 4-port RS-232/422/485 PCI communication card that is compatible with the PCI 2.1/2.2 bus specification and offer transmission rates up to 921.6 kbps. PCI-1612 comes with high-performance 16PCI954 UARTs with a 128-byte FIFO to reduce CPU load. These components make your system more stable and reliable. Thus, the PCI-1612 is especially suitable for multitasking environments. PCI-1612AU, PCI-1612BU and PCI-1612CU have universal PCI connectors that are compatible with both newer 3.3 V signaling systems and the traditional 5 V signaling system. This gives highly-compatibility and allows usage in diverse systems. To further increase reliability, PCI-1612B, PCI-1612BU and PCI-1612CU offers EFT protection for high voltages up to 2,500 V_{DC}. Meanwhile, PCI-1612CU provides 2,500 V_{DC} isolation to protect your PC and equipment against damages from ground loops in harsh environments. Advantech also provides a convenient utility program called ICOM Tools to help test the PCI card performance by analyzing the port status. The menu commands and toolbar buttons of ICOM Tools acts as a PC-based data scope that lets you set a trigger condition, capture the communications data and monitor the signal status. ICOM Tools is applicable to all series of Advantech ICOM cards.

Specifications

General

- **Card Interface** PCI V 2.1 (PCI-1612A, PCI-1612B) Universal PCI V2.2 (PCI-1612AU, PCI-1612BU, 1612CU)
- **Certifications** CE, FCC class A
- **Connectors** 1 x DB37-F
- **Dimensions** 185 x 100 mm (7.3" x 3.9")
- **Power Consumption**

	Typical	Max
	+12 V: 60 mA	+12 V: 80 mA
	+5 V: 270 mA	+5 V: 338 mA

Communications

- **Communication Controller** 16PCI954
- **Data Bits** 5, 6, 7, 8
- **Data Signals** RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
  RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-
  RS-485: Data+, Data-
- **FIFO** 128 bytes
- **Flow Control** RTS/CTS, Xon/Xoff
- **IRQ** Assigned by Plug & Play
- **Parity** None, Odd, Even
- **Speed** 50 bps ~ 921.6 kbps (Supports any baud rate)
- **Stop Bits** 1, 1.5, 2

Protection

- **ESD Protection** 8 kV
- **EFT Protection** 2,500 V_{DC} (PCI-1612B/1612BU/1612CU only)
- **Isolation Protection** 2,500 V_{DC} (PCI-1612CU only)

Software

- **Bundled Software** ICOM Tools
- **OS Support** Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity** 5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature** 0 ~ 65° C (refer to IEC 68-2-1, 2), (32 ~ 149° F)
- **Storage Temperature** -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1612A** 4-port RS-232/422/485 PCI Comm, 4 x DB25
- **PCI-1612A/9** 4-port RS-232/422/485 PCI Comm, 4 x DB9
- **PCI-1612B** 4-port RS-232/422/485 PCI Comm w/EFT, 4 x DB25
- **PCI-1612B/9** 4-port RS-232/422/485 PCI Comm w/EFT, 4 x DB9
- **PCI-1612AU** 4-port RS-232/422/485 Uni PCI Comm, 4 x DB25
- **PCI-1612AU/9** 4-port RS-232/422/485 Uni PCI Comm, 4 x DB9
- **PCI-1612BU** 4-port RS-232/422/485 Uni PCI Comm w/EFT, 4 x DB25
- **PCI-1612BU/9** 4-port RS-232/422/485 Uni PCI Comm w/EFT, 4 x DB9
- **PCI-1612CU** 4-port RS-232/422/485 Uni PCI, Iso/EFT, 4 x DB25
- **PCI-1612CU/9** 4-port RS-232/422/485 Uni PCI, Iso/EFT, 4 x DB9

Note: 30 cm DB37 to 4 x DB25 or DB37 to 4 x DB9 cable included

ADVANTECH **Serial Communication Cards**

PCI-1620 Series

8-port RS-232 PCI Communication Cards

PCI-1620A/B ▲ PCI-1620AU/BU

RoHS COMPLIANT 2002/95/EC FCC CE

1 Operator Panels
2 Fanless Panel PCs
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5 Ethernet Switches
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8 Video Surveillance
9 Pre-Configured Systems
10 IPC Chassis
11 SBCs and Backplanes
12 Industrial Motherboards
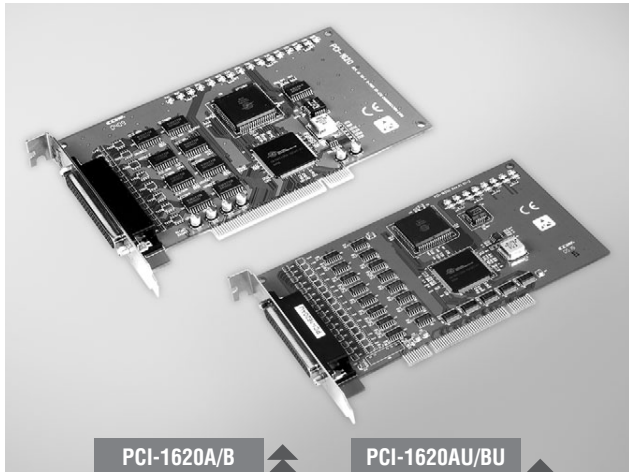13 Embedded IPCs
14 Mobile Computers
15 IPC Peripherals
16 DAQ
17 Signal Conditioning
18 USB DAQ

Features

- PCI bus 2.1, 2.2 (PCI-1620AU, PCI-1620BU) compliant
- Speeds up to 921.6 kbps
- 8-port RS-232
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Interrupt status register for increased performance
- Supports any baud rate with high precision
- Universal PCI (Supports 3.3 V or 5 V PCI bus signal) (PCI-1620AU, PCI-1620BU)

Introduction

PCI-1620 is an 8-port RS-232 PCI communication card that is compatible with the PCI 2.1 bus specification. The card provides eight optional EFT protected RS-232 ports, and has many functions such as high transmission speed of 921.6 kbps, eight independent RS-232 ports and also comes with high-performance 16PCI954 UARTs with 128-byte FIFO and a 16C954 UART to reduce CPU load. Thus, the PCI-1620 is especially suitable for making your system reliable in multitasking environments. PCI-1620AU and PCI-1620BU have an universal PCI connector that is compatible with both 3.3 V signaling and 5 V signaling. This means that PCI-1610AU and PCI-1620BU can not only be used in traditional systems with 5 V signaling but also newer systems with 3.3 V signaling.

To further increase reliability, PCI-1620B and PCI-1620BU offer EFT protection technology, protecting your system from abrupt high voltages of up to 3,000 V_{DC}. Advantech also provides a convenient utility program called ICOM Tools, to help you test the PCI card's performance by analyzing the port status. ICOM Tools is easy to use with its menu commands and toolbar buttons, and acts as a PC-based data scope that lets you set a trigger condition, capture the communications data and monitor the signal status. ICOM Tools is applicable to all series of Advantech ICOM cards.

Specifications

General

- **Bus Type**   PCI-1620A, PCI-1620B: PCI V2.1
  PCI-1620AU, PCI-1620BU: Universal PCI V2.2
- **Certifications**   CE, FCC class A
- **Connectors**   1 x DB62-F
- **Dimensions**   185 x 100 mm (7.3" x 3.9")
- **Power Consumption**

	Typical	Max
	+12 V: 120 mA	+5 V: 180 mA
	+12 V: 150 mA	+5 V: 220 mA

- **Power Requirement**   ±12 V

Communications

- **Communication Controller**   16PCI954+16C954
- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
- **FIFO**   128 bytes
- **Flow Control**   RTS/CTS, Xon/Xoff
- **IRQ**   Assigned by Plug & Play
- **Parity**   None, Odd, Even
- **Speed**   50 bps ~ 921.6 kbps (Supports any baud rate)
- **Stop Bits**   1, 1.5, 2

Protection

- **ESD Protection**   16 kV
- **EFT Protection**   3,000 V_{DC} (PCI-1620B)
  2,500 V_{DC} (PCI-1620BU)

Software

- **Bundled Software**   ICOM Tools
- **OS Support**   Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity**   5 ~ 95 % RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (refer to IEC 68-2-1,2) (32 ~ 149° F)
- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1620A**   8-port RS-232 PCI Comm Card
- **PCI-1620B**   8-port RS-232 PCI Comm Card w/ EFT
- **PCI-1620AU**   8-port RS-232 Uni PCI Comm Card
- **PCI-1620BU**   8-port RS-232 Uni PCI Comm w/EFT
- **OPT8C**   8-port RS-232 cable w/ male DB62 to DB25
- **OPT8H**   8-port RS-232 cable w/ male DB62 to DB9
- **OPT8AP**   8-port RS-232 (DCE) connection box w/ female DB25
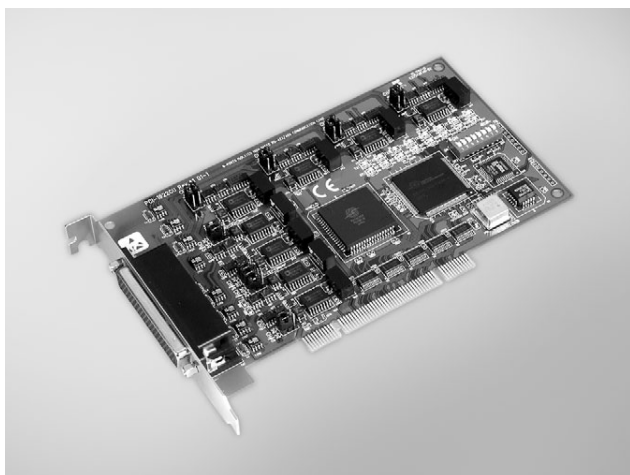- **OPT8BP**   8-port RS-232 (DTE) connection box w/ male DB25

Note: Cable not included.
       For most applications the PCI-1620 requires different cable.

PCI-1622CU

8-port RS-422/485 Universal PCI Communication Card with Isolation & EFT Protection

Features

- PCI 2.2 compliant
- Speeds up to 921.6 kbps
- 8-port RS-422/485
- 16PCI954 UARTs with 128-byte FIFOs standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-485 data flow control
- Supports any baud rate with high precision
- Universal PCI (supports 3.3 V or 5 V PCI bus signal)
- 2,500 V_{DC} EFT Protection
- 2,500 V_{DC} Isolation Protection

RoHS COMPLIANT 2002/95/EC   FCC   CE

Introduction

PCI-1622CU is an 8-port RS-422/485 PCI communication card that is compatible with the PCI 2.2 bus specification. PCI-1622CU provides many functions such as eight independent RS-422/485 ports with isolation protection, high transmission speed of 921.6 kbps, protection and comes with high-performance 16PCI954 UARTs with a 128-byte FIFO to reduce CPU load. These components make your system more stable and reliable. Thus, the PCI-1622CU is especially suitable for multitasking environments.

Advantech provides a convenient utility program called ICOM Tools to help test the PCI card's performance by analyzing the port status. The menu commands and toolbar buttons of ICOM Tools acts as a PC-based data scope that lets you set a trigger condition captures the communication data and monitors the signal status. ICOM Tools is applicable to all series of Advantech ICOM cards.

Specifications

General

- **Card Interface**   Universal PCI V2.2
- **Certifications**   CE, FCC class A
- **Connectors**   1 x DB78-F
- **Dimensions**   185 x 100 mm (7.3" x 3.9")
- **Power Consumption**   600 mA @ 5 V

Communications

- **Communication Controller**   16PCI954+16C954
- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-422: TX+, TX-, RX+, RX-, RTS+, RTS-, CTS+, CTS-, GND
  RS-485: Data+, Data-, GND
- **FIFO**   128 bytes
- **Flow Control**   RTS/CTS, Xon/Xoff
- **IRQ**   Assigned by Plug & Play
- **Parity**   None, Odd, Even
- **Ports**   8
- **Speed**   50 bps ~ 921.6 kbps (Supports any baud rate)
- **Stop Bits**   1, 1.5, 2

Protection

- **ESD Protection**   16 kV
- **Isolation Protection**   2,500 V_{DC}
- **EFT Protection**   2,500 V_{DC}

Software

- **Bundled Software**   ICOM Tools
- **OS Support**   Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity**   5 ~ 95% RH, non-condensing, (IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (32 ~ 149° F) (IEC 68-2-1, 2)
- **Storing Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1622CU**   8-port RS-422/485 Uni PCI Comm, Iso/EFT
- **OPT8I**   1 m DB78 to 8 DB25 cable
- **OPT8J**   1 m DB78 to 8 DB9 cable

Note: Cable not included
For most applications the PCI-1622 requires an OPT8I or OPT8J cable.

PCI-1602UP
PCI-1604UP
PCI-1610UP/AUP

2-port RS-422/485 Low-Profile PCI Communication Card with Isolation and EFT Protection

2-port RS-232 Low-Profile PCI Communication Card with EFT Protection

4-port RS-232 Low-Profile Universal PCI Communication Card with EFT Protection

PCI-1602UP   **PCI-1604UP**
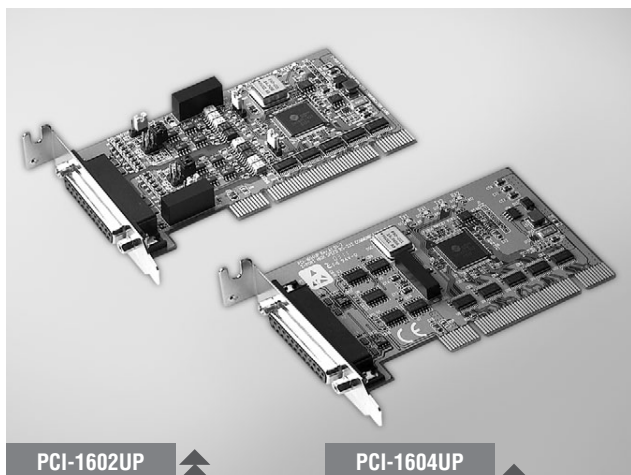
RoHS COMPLIANT 2002/95/EC FCC CE

Features

- PCI bus 2.2 compliant
- Speeds up to 921.6 kbps
- 2-port RS-422/485 (PCI-1602UP); 2-port RS-232 (PCI-1604UP); 4-port RS-232 (PCI-1610UP/AUP)
- I/O address automatically assigned by PCI Plug & Play
- OS support: Windows 2000/XP/Vista/7 , Windows CE 5.0/6.0, Linux
- 2,500V_{DC} EFT Protection
- 2,500V_{DC} Isolation protection for RS-422/485 (PCI-1602UP)
- Interrupt status register for increased performance
- Space reserved for termination resistors (PCI-1602UP)
- Automatic RS-485 data flow control (PCI-1602UP)
- Supports any baud rate with high precision
- Universal and Low-profile PCI (Supports 3.3 V or 5 V PCI bus signal)

Introduction

These RS-232/422/485 PCI communication cards are compatible with the PCI 2.2 bus specification for universal connectivity and low profile PCI cards. PCI-1604UP provides two independent RS-232 ports, while PCI-1602UP has two RS-422/485 ports. PCI-1610UP and PCI-1610AUP provide 4 RS-232 ports.To improve system performance, all cards allow transmission rates up to 921.6 kbps. To increase reliability, the cards offer EFT protection, protecting your system from abrupt high voltages up to 2,500 V_{DC}. High-performance 16PCI952 and 16PCI954 UARTs with 128-byte FIFO, reduces the CPU load, making the cards especially suitable for multitasking environments.

The cards follow the Low Profile PCI MD1 standard. This standard has the same protocol and electronic definition as standard PCI, but the Low Profile PCI standard is smaller. Thus, the cards are suitable for embedded systems, and size-constrained environments. Moreover, all cards are equipped with an universal PCI connector, which allows support for traditional systems with 5 V signaling or newer systems with 3.3 V signaling.

Specifications

General

- **Bus Type** — Universal PCI V 2.2
- **Certifications** — CE, FCC class A
- **Connectors** — PCI-1610UP: 1 x Female DB44
  PCI-1602UP and PCI-1604UP: 1 x Female DB25
- **Dimensions** — 119.91 x 64.41 mm (4.7" x 2.5") (Low profile MD1)
- **Power Consumption** — 5 V @ 400 mA (Max.)
- **Power Requirement** — 5 V

Communications

- **Communication Controller** — PCI-1602UP, PCI-1604UP: 16PCI952
  PCI-1610UP: 16PCI954
- **Data Bits** — 5, 6, 7, 8
- **Data Signals** — RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
  RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND
  RS-485: Data+, Data-, GND
- **FIFO** — 128 bytes
- **Flow Control** — CTS/RTS, Xon/Xoff
- **IRQ** — Assigned by Plug & Play
- **Parity** — None, Odd, Even
- **Speed** — 50 bps ~ 921.6 kbps (Supports any baud rate)
- **Stop Bits** — 1, 1.5, 2

Protection

- **ESD Protection** — 16 kV
- **Isolation Protection** — 2,500 V_{DC} (PCI-1602UP)
- **EFT Protection** — 2,500 V_{DC} (PCI-1602UP, PCI-1604UP, PCI-1610UP)

Software

- **Bundled Software** — ICOM Tools
- **OS Support** — Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux

Environment

- **Operating Humidity** — 5 ~ 95 % RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature** — 0 ~ 65° C (refer to IEC 68-2-1, 2) (32 ~ 149° F)
- **Storage Temperature** — -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1602UP** — 2-port RS-422/485 Low-Profile Uni PCI Comm Card
- **PCI-1604UP** — 2-port RS-232 Low-Profile Uni PCI Comm Card
- **PCI-1610UP** — 4-port RS-232 Low-Profile Uni PCI Comm w/EFT
- **PCI-1610AUP** — 4-port RS-232 Low-Profile Uni PCI Comm Card

Note: 30 cm DB25 to 2 x DB9 or 30 cm DB44 to 4 x DB9 cable included

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14 Mobile Computers
15 IPC Peripherals
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17 Signal Conditioning
18 USB DAQ

PCI-1682U

2-port CAN-bus Universal PCI Communication Card with CANopen Support

NEW
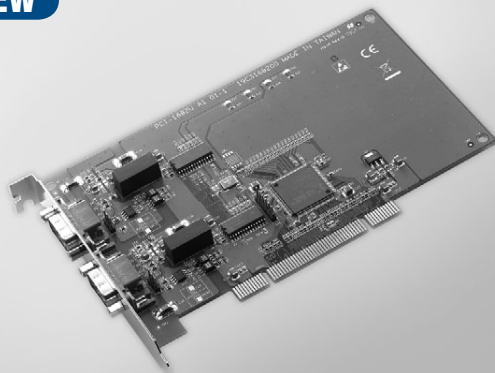
Features

- PCI bus 2.2 compliant
- Operates two separate CAN networks at the same time
- High speed transmission up to 1 Mbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 1000 V_{DC} ensures system reliability
- I/O address automatically assigned by PCI PnP
- LED indicated transmit/receive status on each port
- Windows® DLL library and examples included
- Universal PCI (Supports 3.3 V or 5 V PCI bus signal)
- Supports Windows 2000/XP/Vista/7 and Linux
- Supports CANopen protocol

RoHS COMPLIANT 2002/95/EC FCC CE

Introduction

PCI-1682U is a special purpose communication card that offers the connectivity of the Controller Area Network (CAN) to your PC. With its built-in CAN controllers, the PCI-1682U provides bus arbitration and error detection with an automatic transmission repeat function. This drastically reduces the chance of data loss and ensures system reliability. The onboard CAN controllers are located at different positions in the memory, and you can run both CAN controllers independently at the same time. Besides, PCI-1682U has a universal PCI connector, which is compatible with both new 3.3 V signaling systems and traditional 5 V signaling systems. With high-compatibility, the PCI-1682U can be used in diverse systems.

Controller Area Network (CAN)

The CAN is a serial bus system especially suitable for networking "intelligent" I/O devices as well as sensors and actuators within a machine or plant. Characterized by its multi-master protocol, real-time capability, error correction, high noise immunity, and the existence of many different silicon components, the CAN serial bus system, originally developed by Bosch™ for use in automobiles, is increasingly being used in industrial automation.

Direct Memory Mapping Enables Direct Access to the CAN Controller

The PCI-1682U is assigned a memory address. This is the simplest method of integrating a board in a PC and provides the quickest access since the board is treated by the PC as being standard RAM.

Optical Isolation Protection

Onboard optical isolators protect your PC and equipment against damage from ground loops, which increases system reliability in harsh environments.

Specifications

General

- **Card Interface**   Universal PCI V 2.2
- **Certifications**   CE, FCC class A
- **Connectors**   2 x DB9-M
- **Dimensions**   185 x 100 mm (7.3" x 3.9")
- **Ports**   2
- **Power Consumption**   5 V @ 400 mA (Typical)

Communication

- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN 2.0 A/B
- **Signal Support**   CAN_H, CAN_L
- **Speed**   1 Mbps

Protection

- **Isolation Protection**   1,000 V_{DC}
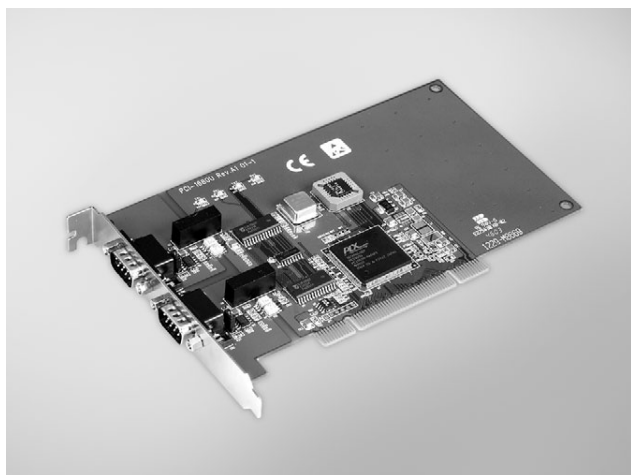
Environment

- **Operating Humidity**   5 ~ 95% RH, non-condensing
- **Operating Temperature**   0 ~ 65° C (32 ~ 149° F)
- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1682U**   2-port CAN-bus Uni PCI COMM Card w/CANopen

PCI-1680U

2-port CAN-bus Universal PCI Communication Card with Isolation Protection

1 Operator Panels
2 Fanless Panel PCs
3 Panel Computers
4 Display Solutions
5 Ethernet Switches
6 Device Servers
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9 Pre-Configured Systems
10 IPC Chassis
11 SBCs and Backplanes
12 Industrial Motherboards
13 Embedded IPCs
14 Mobile Computers
15 IPC Peripherals
16 DAQ
17 Signal Conditioning
18 USB DAQ

Features

- PCI bus 2.2 compliant
- Operates two separate CAN networks at the same time
- High speed transmission up to 1 Mbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 1000 V_{DC} ensures system reliability
- I/O address automatically assigned by PCI PnP
- LED indicated transmit/receive status on each port
- Windows® DLL library and examples included
- Universal PCI Universal PCI (Supports 3.3 V or 5 V PCI bus signal)
- Supports Windows 2000/XP/Vista/7 and Linux

RoHS COMPLIANT 2002/95/EC   FCC   CE

Introduction

PCI-1680U is a special purpose communication card that offers the connectivity of the Controller Area Network (CAN) to your PC. With its built-in CAN controllers, the PCI-1680U provides bus arbitration and error detection with an automatic transmission repeat function. This drastically reduces the chance of data loss and ensures system reliability. The onboard CAN controllers are located at different positions in the memory, and you can run both CAN controllers independently at the same time. Besides, PCI-1680U has a universal PCI connector, which is compatible with both new 3.3 V signaling systems and traditional 5 V signaling systems. With high-compatibility, the PCI-1680U can be used in diverse systems.

Controller Area Network (CAN)

The CAN is a serial bus system especially suitable for networking "intelligent" I/O devices as well as sensors and actuators within a machine or plant. Characterized by its multi-master protocol, real-time capability, error correction, high noise immunity, and the existence of many different silicon components, the CAN serial bus system, originally developed by Bosch™ for use in automobiles, is increasingly being used in industrial automation.

Direct Memory Mapping Enables Direct Access to the CAN Controller

The PCI-1680U is assigned a memory address. This is the simplest method of integrating a board in a PC and provides the quickest access since the board is treated by the PC as being standard RAM.

Optical Isolation Protection

Onboard optical isolators protect your PC and equipment against damage from ground loops, which increases system reliability in harsh environments.

Specifications

General

- **Card Interface**   Universal PCI V 2.2
- **Certifications**   CE, FCC class A
- **Connectors**   2 x DB9-M
- **Dimensions**   185 x 100 mm (7.3" x 3.9")
- **Ports**   2
- **Power Consumption** 5 V @ 400 mA (Typical)

Communication

- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN 2.0 A/B
- **Signal Support**   CAN_H, CAN_L
- **Speed**   1 Mbps

Protection

- **Isolation Protection**   1,000 V_{DC}

Environment

- **Operating Humidity**   5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature**   0 ~ 65° C (refer to IEC 68-2-1, 2) (32 ~ 149° F)
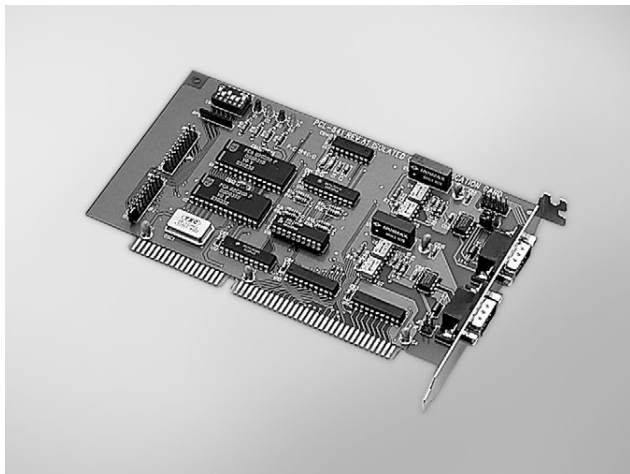- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCI-1680U**   2-port CAN-bus Uni PCI COMM Card w/Iso

PCL-841

Features

- Operates two separate CAN networks at the same time
- High speed transmission up to 1M kbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 1000 VDC ensures system reliability
- Wide IRQ selection for each port: IRQ 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- LEDs indicate Transmit/Receive status on each port
- Direct memory mapping enables very fast access to the CAN controllers
- Windows DLL library and examples included
- Supports Windows 2000/XP/Vista/7 and Linux

Introduction

The PCL-841 is special purpose communication cards which offer the connectivity of the Controller Area Network to your PC. With its built-in CAN controllers, the PCL-841 provides bus arbitration and error detection with an automatic transmission repeat function. This drastically reduces the chance of data loss and ensures system reliability. The onboard CAN controllers are located at different positions in the memory. You can run both CAN controllers independently at the same time. The PCL-841 operates at baud rates up to 1 Mbps and can be installed in a PC expansion slot.

Specifications

General

- **Bus Interface**   ISA
- **Certifications**   CE
- **Connectors**   2 x DB9 Male
- **Dimensions**   185 x 100 mm (7.3" x 3.9")
- **Ports**   2
- **Power Consumption**   +5V @ 400 mA typical, 950 mA max.

Communication

- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN 2.0 A/B
- **Signal Support**   CAN_H, CAN_L
- **IRQ**   3, 4, 5, 6, 7, 9, 10, 11, 12 or 15
- **Base Address**   From C800H to EF00H

Protection

- **Isolation Protection**   1000 V_{DC}

Environment

- **Operating Humidity**   5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)
- **Operating Temperature** 0 ~ 50° C (32 ~ 122° F)
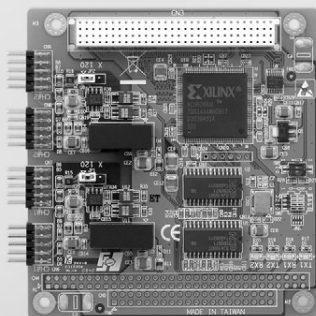- **Storage Temperature**   -25 ~ 85° C (-13 ~ 185° F)

Ordering Information

- **PCL-841**   Dual-port Isolated CAN-bus Interface Card

PCM-3680I
PCM-3680

2-port CAN-bus PCI-104 Module with Isolation Protection

2-port CAN-bus PC/104 Module with Isolation Protection

NEW

PCM-3680I

RoHS COMPLIANT 2002/95/EC   CE

PCM-3680

RoHS COMPLIANT 2002/95/EC   CE

Features

- PCI-104 Bus
- Operates two separate CAN networks at the same time
- High speed transmission up to 1 Mbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 2,500 V_{DC} ensures system reliability
- I/O address automatically assigned by PCI PnP
- LED indicated transmit/receive status on each port
- Windows DLL library and examples included
- Supports high operating temperature (-40 ~ 85° C)
- Supports Windows 2000/XP/Vista and Linux

Specifications

General
- **Card Interface**   PCI-104
- **Certifications**   CE
- **Connectors**   4 x 10 pin box header
- **Dimensions**   90 x 96 mm (3.6" x 3.8")
- **Ports**   2
- **Power Consumption** 5 V @ 400 mA

Communications
- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN2.0 A/B
- **Speed**   Up to 1 Mbps programmable transfer rate
- **CAN Frequency**   16 MHz
- **Signal Support**   CAN_H, CAN_L

Protection
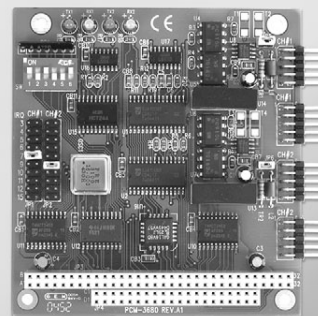- **Isolation Protection** 2,500 V_{DC}

Environment
- **Operating Temperature** -40 ~ 85° C (refer to IEC 68-2-1, 2) (-40 ~ 185° F)

Ordering Information

- **PCM-3680I**   2-port CAN-bus PCI-104 Module w/ Iso. Protection

Features

- Operates two separate CAN networks at the same time
- High speed transmission up to 500 kbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 1,000 V_{DC} ensures system reliability
- Wide IRQ selection for each port: IRQ 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- LEDs indicate Transmit/Receive status on each port
- Direct memory mapping enables very fast access to the CAN controllers
- Windows DLL library and examples included
- Supports Windows 2000/XP/Vista and Linux

Specifications

General
- **Card Interface**   PC/104
- **Certifications**   CE
- **Connectors**   2 x DB9-M w/cable
- **Dimensions**   90 x 96 mm (3.6" x 3.8")
- **Ports**   2
- **Power Consumption** 5 V @ 400 mA

Communications
- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN2.0 A/B
- **IRQ**   3, 4, 5, 6, 7, 9, 10, 11, 12 or 15
- **Memory Segment**   From C800H to EF00H
  Base Address
- **Signal Support**   CAN_H, CAN_L

Protection
- **Isolation Protection** 1,000 V_{DC}

Environment
- **Operating Temperature** 0 ~ 65° C (32 ~ 122° F)

Ordering Information

- **PCM-3680**   Dual-port Isolated CAN Interface Module

1 Operator Panels
2 Fanless Panel PCs
3 Panel Computers
4 Display Solutions
5 Ethernet Switches
6 Device Servers
7 Serial Comm. Cards
8 Video Surveillance
9 Pre-Configured Systems
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14 Mobile Computers
15 IPC Peripherals
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17 Signal Conditioning
18 USB DAQ

PCM-3610
PCM-3612
PCM-3614

2-port RS-232/422/485 PC/104 Module with Isolation Protection
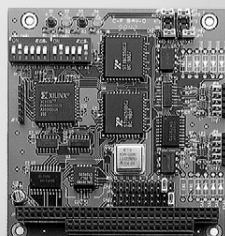
2-port RS-422/485 PC/104 Module

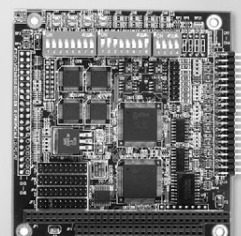**4-port RS-422/485 High-speed PC/104 Module**

PCM-3610 · RoHS COMPLIANT 2002/95/EC · FCC CE

PCM-3612 · RoHS COMPLIANT 2002/95/EC · FCC CE
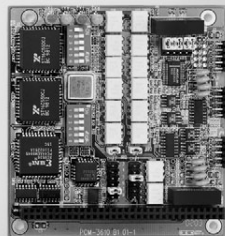
PCM-3614 · RoHS COMPLIANT 2002/95/EC · FCC CE

Features

- High speed transmission rate
- Automatic RS-485 data flow control
- Jumper selectable interrupt level
- Supports Windows 98/2000/XP
- Supports WinCE 3.0, 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

Features

- Long distance communication
- Automatic RS-485 data flow control
- Jumper selectable interrupt level
- Supports Windows 98/2000/XP
- Supports WinCE 3.0, 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

Features

- Automatic RS-485 data flow control
- Shared IRQ settings for each ports
- LED indicators: TX, RX
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Supports Windows 98/2000/XP
- Supports WinCE 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

Specifications

General
- **Card Interface** — PC/104
- **Certifications** — CE
- **Connectors** — 2 x DB9-M
- **Ports** — 2
- **Power Consumption** — Typical: 5 V @ 400 mA
  Max.: ±12 V @ 950 mA

Communications
- **Channel 1** — RS-232, 422, or 485
- **Channel 2** — RS-422, or RS-485
- **Character Length** — 5, 6, 7, or 8 bits
- **IRQ** — 3, 4, 5, 6, 7, 9
- **Parity** — Even, odd, or none
- **Speed** — 50 bps ~ 115.2 kbps
- **Stop Bit** — 1, 1.5, or 2

Protection
- **Isolation Protection** — 1,000 V_{DC}

Environment
- **Operating Humidity** — 0 ~ 90 % RH
- **Operating Temperature** — 0 ~ 65° C (32 ~ 149° F)
- **Storage Temperature** — -40 ~ 85° C (-40 ~ 185° F)

Ordering Information
- **PCM-3610** — Isolated RS-232/422/485 Module

Specifications

General
- **Card Interface** — PC/104
- **Certifications** — CE
- **Connectors** — 2 x DB9-M
- **Indicators** — Red LED for TX
  Green LED for RX
- **Ports** — 2
- **Power Consumption** — 5 V @ 400 mA typical

Communications
- **Channel 1 and 2** — RS-422, or RS-485
- **Character Length** — 5,6,7, or 8 bits
- **IRQ** — 3, 4, 5, 6, 7, 9, 10, 11, 12 or 15
- **Parity** — Even, odd, or none
- **Speed** — 50 bps ~ 115.2 kbps
- **Stop Bit** — 1, 1.5, or 2

Environment
- **Operating Humidity** — 0 ~ 90 % RH
- **Operating Temperature** — 0 ~ 65° C (32 ~ 149° F)
- **Storage Temperature** — -40 ~ 85° C (-40 ~ 185° F)

Ordering Information
- **PCM-3612** — Dual Port RS-422/485 Module

Specifications

General
- **Card Interface** — PC/104
- **Certifications** — CE
- **Connectors** — 4 x DB9-M
- **Ports** — 4
- **Power Consumption** — 5 V @ 450 mA

Communications
- **Data Bits** — 5, 6, 7, 8
- **I/O Address Range** — 0 x 000 ~ 0 x 3F8
- **IRQ** — 3, 4, 5, 6, 7, 9, 10, 11, 12, or 15
- **Parity** — Even, odd, or none
- **Data Signals** — RS-422: TxD+, TxD-, RxD+, RxD-, CTS+, CTS-, RTS+ and RTS-
  RS-485: DATA+, DATA-, CTS+, CTS-
- **Speed** — 50 bps ~ 921.6 kbps
- **Stop Bits** — 1, 1.5, 2

Protection
- **EFT Protection** — 1,000 V_{DC}
- **Termination Resistor** — 120 Ω

Environment
- **Operating Humidity** — 0 ~ 90 % RH
- **Operating Temperature** — 0 ~ 65° C (32 ~ 149° F)
- **Storage Temperature** — -40 ~ 85° C (-40 ~ 185° F)
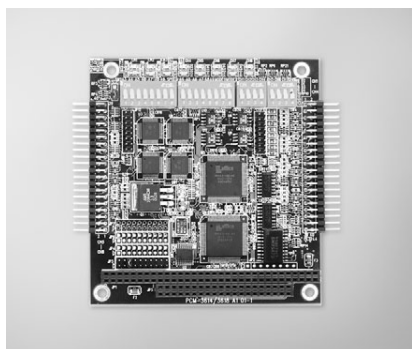
Ordering Information
- **PCM-3614** — 4-port RS-422/485 High-speed Module

PCM-3618
PCM-3640/3641
PCM-3660

8-port RS-422/485 High-speed PC/104 Module
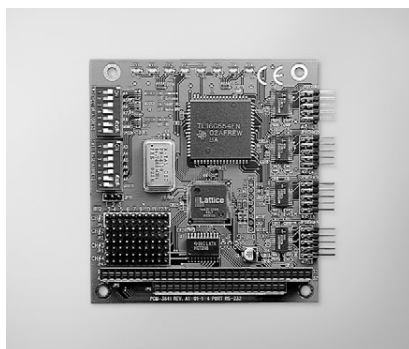
4-port RS-232 High-speed PC/104 Module
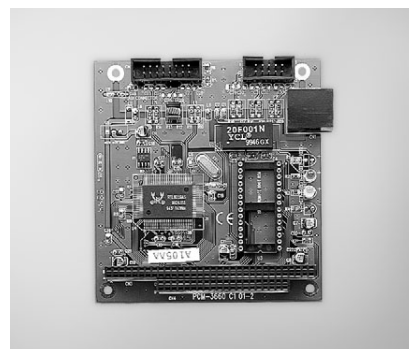
Jumperless Ethernet PC/104 Module

PCM-3618   RoHS COMPLIANT 2002/95/EC   FCC CE

PCM-3640/3641   RoHS COMPLIANT 2002/95/EC   CE

PCM-3660   RoHS COMPLIANT 2002/95/EC   CE

Features

- Automatic RS-485 data flow control
- Shared IRQ settings for each ports
- LED indicators: TX, RX
- Supports Windows 98/2000/XP
- Supports WinCE 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

Features

- Transmission speeds up to 460 kbps (PCM-3641)
- Shared IRQ settings for each of 4 RS-232 ports (PCM-3641)
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Supports Windows 98/2000/XP
- Supports WinCE 3.0, 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

Features

- Automatically detects 8-bit or 16-bit
- AUI connector supports external MAUs
- Onboard 32 KB buffer for multi-packages

Specifications

General

Card Interface	PC/104
Certifications	CE
Connectors	8 x DB9-M
Ports	8
Power Consumption	5 V @ 650 mA

Communications

Data Bits	5, 6, 7, 8
I/O Address Range	0 x 000 ~ 0 x 3F8
IRQ	3, 4, 5, 6, 7, 9, 10, 11, 12, 15
Parity	None, even and odd
Data Signals	RS-422: TxD+, TxD-, RxD+, RxD-, CTS+, CTS-, RTS+ and RTS- RS-485: DATA+, DATA-, CTS+, CTS-
Speed	50 bps ~ 921.6 kbps
Stop Bits	1, 1.5, 2
Termination Resistor	120 Ω

Protection

EFT Protection	1,000 V_{DC}

Environment

Operating Humidity	0 ~ 90 % RH
Operating Temperature	0 ~ 65° C (32 ~ 149° F) (IEC-68-1-1, 2)
Storage Temperature	-25 ~ 80° C (-13 ~ 176° F)

Ordering Information

PCM-3618	8-port RS-422/485 High-Speed Module

Specifications

General

Card Interface	PC/104
Certifications	CE
Connectors	4 x DB9-M
Ports	4
Power Consumption	Typical: 5 V @ 200 mA Max.: 5 V @ 250 mA

Communications

Data Bits	5, 6, 7, 8
Data Signals	RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
I/O Address Range	0 x 0200 ~ 0 x 03F8
IRQ	3, 4, 5, 6, 7, 9, 10, 11, 12, 15
Parity	None, even and odd
Speed	50 bps ~ 460.3 kbps (PCM-3641) 50 bps ~ 115.2 kbps (PCM-3640)
Stop Bits	1, 1.5, 2

Environment

Operating Humidity	0 ~ 90 % RH
Operating Temperature	0 ~ 65° C (32 ~ 149° F) (IEC-68-1-1, 2)
Storage Temperature	-25 ~ 80° C (-13 ~ 176° F)

Ordering Information

PCM-3640	4-port RS-232 Module
PCM-3641	4-port RS-232 High-speed Module

Specifications

General

Boot ROM Address	C0000, C8000, D0000, or D8000H
Card Interface	PC/104
Certifications	CE
Connectors	1 x PC/104 stackthrough 1 x 10Base-T (RJ-45) 1 x 16-pin insulation displacement connector for AU1
Power Consumption	5 V @ 400 mA max

Communications

Data Bus	8-bit, 16-bit, or auto-sending
I/O Address	200, 220, 240, 260, 280, 2A0, 2C0, 300, 320, 340, 380, 3A0
IRQ	3,4,5,9, 10, 11, 12 or 15
Standard	IEEE 802.3 10 Mbps CSMA/CD 10Base-T Transceiver

Ordering Information

PCM-3660	Jumperless Ethernet Module

PCM-3614I/3618I
PCM-3641I/3642I

4/8-port RS-232/422/485 PCI-104 Module

4/8-port RS-232 PCI-104 Module

PCM-3614I

FCC CE

PCM-3642I

CE
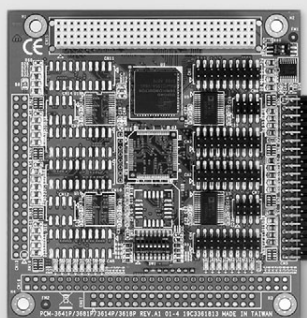
Features

- Automatic RS-485 data flow control
- Shared IRQ settings for each port
- LED indicators: TX, RX
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Powerful and easy-to-use utility (ICOM Tools)
- Supports Windows 2000/XP/Vista

Specifications

General

- **Card Interface**   PCI-104
- **Connectors**   PCM-3614I: 1 x 40-pin box header
  PCM-3618I: 2 x 40-pin box header
- **Ports**   PCM-3614I: 4
  PCM-3618I: 8
- **Power Consumption**   5 V @ 450 mA

Communications

- **Data Bits**   5, 6, 7, 8
- **Data Signals**   RS-422: TxD+, TxD-, RxD+, RxD-, CTS+, CTS-, RTS+, RTS-
  RS-485: DATA+, DATA-, GND
  RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
- **IRQ**   3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- **Parity**   None, even and odd
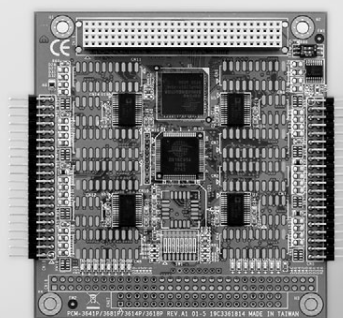- **Speed**   50 bps ~ 921.6 kbps
- **Stop Bits**   1, 1.5, 2

Protection

- **EFT Protection**   1,000 V_{DC}
- **Termination Resistor**   120 Ω

Environment

- **Operating Humidity**   0 ~ 90 % RH
- **Operating Temperature**   0 ~ 65° C (32 ~ 149° F)
- **Storage Temperature**   -25 ~ 80° C (-13 ~ 176° F)

Ordering Information

- **PCM-3614I**   4-port RS-232/422/485 PCI-104 Module
- **PCM-3618I**   8-port RS-232/422/485 PCI-104 Module

Features

- Transmission speeds up to 460 kbps
- Shared IRQ settings for each port
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Powerful and easy-to-use utility (ICOM Tools)
- Supports Windows 2000/XP/Vista

Specifications

General

- **Card Interface**   PCI-104
- **Connectors**   PCM-3641I: 1 x 40-pin box header
  PCM-3642I: 2 x 40-pin box header
- **Ports**   PCM-3641I: 4
  PCM-3642I: 8
- **Power Consumption**   5 V @ 250 mA (max.)

Communications

- **Data Bits**   5, 6, 7, 8
- **Data Signals**   TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
- **IRQ**   3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- **Parity**   None, even and odd
- **Speed**   50 bps ~ 460.3 kbps
- **Stop Bits**   1, 1.5, 2

Protection

- **EFT Protection**   1,000 V_{DC}
- **Termination Resistor**   120 Ω

Environment

- **Operating Humidity**   0 ~ 90 % RH
- **Operating Temperature**   0 ~ 65° C (32 ~ 149° F) (IEC-68-1-1, 2)
- **Storage Temperature**   -25 ~ 80° C (-13 ~ 176° F)

Ordering Information

- **PCM-3641I**   4-port RS-232 PCI-104 Module
- **PCM-3642I**   8-port RS-232 PCI-104 Module

ADVANTECH | **Serial Communication Cards**

Accessories

OPT1I
1 m RJ-45 to male DB9 cable
To be used with:
EKI-1528, EKI-1526

OPT1J
30 cm RJ-45 to male DB9 cable
To be used with:
EKI-1528, EKI-1526

OPT1A
1 m RJ-48 to male DB9 cable
To be used with:
ADAM-4570, ADAM-4570L

OPT1D
30 cm RJ-48 to male DB9 cable
To be used with:
ADAM-4570, ADAM-4570L

OPT4A
30 cm DB-37 to 4 x male DB9 cable
To be used with:
PCI-1610A/B/CU, PCI-1611U, PCI-1612A/B/AU/BU/
CU, PCL-746+, PCL-846A/B, PCL-849A/B/+/L

OPT8C
1 m DB62 to 8 x male DB25 cable
To be used with:
PCI-1620A/B/AU/BU, PCI-1625U, PCL-844+,
PCL-858A/B

OPT8H
1m DB-62 to 8 x male DB9 cable
To be used with:
PCI-1620A/B/AU/BU, PCI-1625U, PCL-844+,
PCL-858A/B

OPT8I
1 m DB-78 to 8 x male DB25 cable
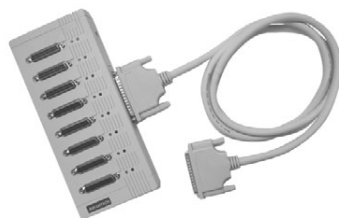To be used with:
PCI-1622CU

OPT8J
1 m DB-78 to 8 x male DB9 cable
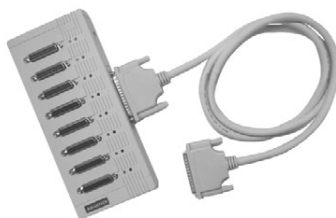To be used with:
PCI-1622CU

OPT8AP
8-port RS-232 Connection Box (DCE) with female DB25 connector
To be used with:
PCI-1620A/B/AU/BU, PCI-1625U, PCL-844+,
PCL-858A/B

OPT8BP
8-port RS-232 Connection Box (DTE) with male DB25 Connector
To be used with:
PCI-1620A/B/AU/BU, PCI-1625U, PCL-844+,
PCL-858A/B

OPT1E
1 m RJ-45 to male DB9 cable

OPT1F
30 cm RJ-45 to male DB9 cable
To be used with:
PCI-1610AJU

1 Operator Panels
2 Fanless Panel PCs
3 Panel Computers
4 Display Solutions
5 Ethernet Switches
6 Device Servers
7 Serial Comm. Cards
8 Video Surveillance
9 Pre-Configured Systems
10 IPC Chassis
11 SBCs and Backplanes
12 Industrial Motherboards
13 Embedded IPCs
14 Mobile Computers
15 IPC Peripherals
16 DAQ
17 Signal Conditioning
18 USB DAQ